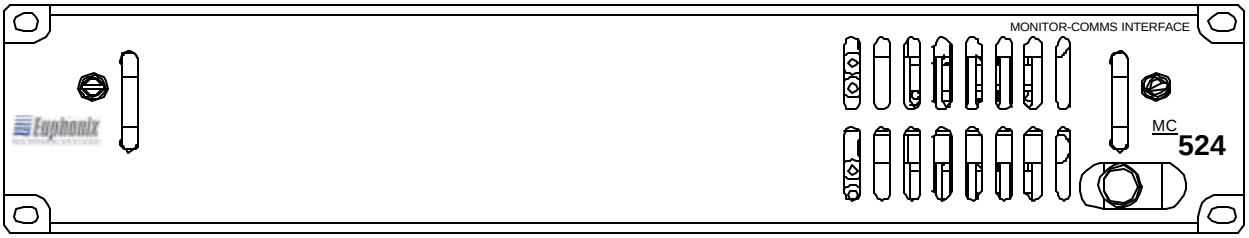

MC524 Monitor Interface Manual

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MC524 MONITOR INTERFACE

Box Inventory

The MC524 Monitor Interface box contains the following items.

Description	Part #	Qty
MC524 Monitor Interface	956-06680-01	1
Power supply, MC524	946-06692-01	1
MC524 Manual	840-07521-01	1

The MC524 is packaged without cables. Sync, Control, MADI, and audio cables are required. 10 meter, 20 meter or custom length cable kits are available for order. See the 'User Reference' section.

Safety and Precautions

1) Read Instructions - Read all the safety and operation instructions before operating the MC524 converters.

2) Heed Warnings – Follow all warnings on the MC524 and in these operating instructions.

3) Water and Moisture – Do not use the MC524 near water.

4) Heat – Locate the MC524 away from heat sources.

5) Power Sources – Connect the MC524 only to a power supply of the type described in these operation instructions or as marked on the MC524.

6) Power Cord Protection – Route power cords so that the are not likely to be walked upon or pinched by items placed on them.

7) Object and Liquid Entry – Do not drop objects or spill liquids on the MC524.

8) Damage Requiring Service – The MC524 should be serviced only by qualified personnel when:
    a) Objects have fallen, or liquid has spilled into the MC524; or
    b) The MC524 does not appear to operate or exhibits a marked change in performance; or,
    c) The MC524 have been dropped or there is damage to a chassis.
9) Servicing – Do not attempt to service the MC524 beyond those means described in this operation manual. All other servicing should be referred to the Euphonix Tech Support department.
10) Fuse replacement – To prevent electric shock and avoid risk of fire, replace fuse only with the same type and rating.
11) To prevent electric shock, do not use the MC524 polarized plug with and extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.
12) Grounding or Polarization – Do not defeat the grounding or polarization of the MC524.

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13) Cooling - In order to provide adequate ventilation for product cooling, Euphonix recommends that One (1) rack space be left open on TOP of every two (2) box devices except the S5 computers. . Examples of box devices are 2RU high converters, the Mic/Line Interface and the Monitor Controller. The Mic-Line and the Monitor box must be on the TOP of the group of two.

THERE ARE NO USER SERVICEABLE PARTS IN THE MC524

System Setup

The MC524 receives control information from the System 5 Interface Pilot via a 15 pin Dsub cable.

All necessary connections to the MC524 are described in the cable specifications and hookup diagrams in this document.

Power On Sequence

The MC524 can be powered up independently of the Digital Core components. It can be left powered on continuously in a typical installation.

CE

CE certification for the MC524 is available from the factory.

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Component Overview

Functional Description

The MC524 Monitor Interface centralizes Control Room monitor and communication signals in one box and places them under remote control of the system operator. A digitally controlled analog signal router and level control device with a built in Talk Back microphone circuit, the MC524 is packaged in a 2RU enclosure.

The MC524 receives the 22 monitor busses and 2 Solo busses from the System 5 monitor matrix output and provides a control room output to 3 speaker sets, 4 "SLS/Cue" monitor outputs as well as post preamp talk and listen mic outputs.

Digital control of the MC524 is provided by the SC253i Interface Pilot over a 15-pin control cable, (maximum length 100M.) This gives the system operator control of all parameters from the System 5 control surface.

Features

Mic Inputs

Mic level inputs are provided for 4-Listen and 2-Talk mics on a 38 pin ELCO connector An analog gain stage provides boost or attenuation for mic level signals. Talk Back mic inputs include phantom power and a compressor.

Line Inputs

24 line level inputs are provided for Control Room feeds, Monitor A-D, and Solo. Only attenuation is provided for line level inputs.

Line Outputs

90 pin ELCO connectors provide outputs for 8 Monitor A (up to 7.1 monitoring), 2 each Monitor B-D, 8 Control Room Main (up to 7.1 monitoring), 6 Control Room Alt 1 (up to 5.1 monitoring), 2 Control Room Alt 2, 4 Listen preamp , 2 Talk preamp out and 2 Solo outputs.

All cabling is provided from the digital input to the final user connections of the output patchbay. See the cabling diagrams in the User Reference section.

Applications

In System 5, the MC524 provides the engineer with fingertip control over Control Room communications from the System 5 control surface. Level Control, Cut, Dim and speaker selection are all actuated from the System 5 Console Center Section. Recommended for installation in the Control Room, there is only one MC524 in a System 5 configuration.

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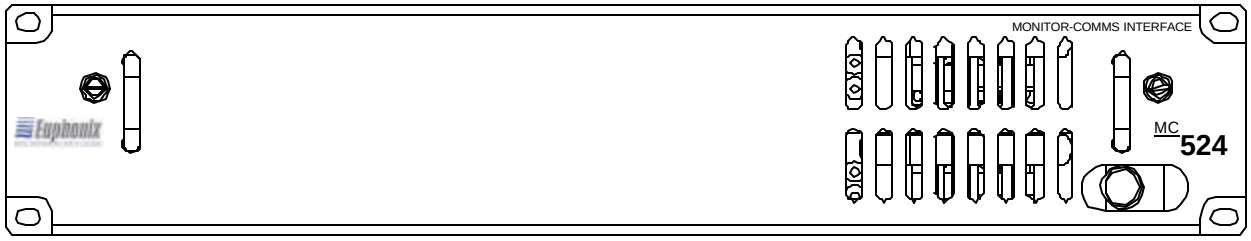
Physical Specifications

Dimensions

Height: 3.5 inches
Width: 19 inches
Depth: 18.6 inches
Weight: 17 lbs
Approximately 6 inches of depth should be left behind the MC524 for cable connections.

Front Panel



Power Switch On/Off button powers the unit up.

Since the MC524 is digitally controlled via software, there are no other user controls on the front panel.

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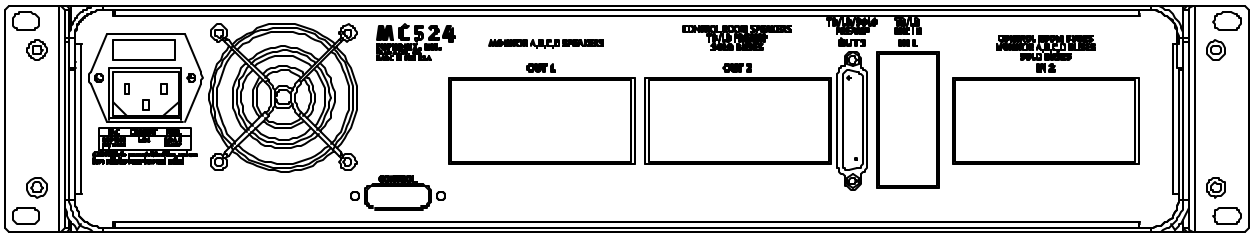
Rear Panel Connectors



In 1 (38 pin ELCO) Talk Back, Listen Back and Mic inputs. This connector is mapped to receive 4 stereo listen channels and 2 stereo talk mic inputs. All signals input at this port can be level boosted or attenuated. In standard patch configuration, input cable fans out to 12 XLR females.

In 2 (90 pin ELCO) Control Room Busses, Monitor A, B, C, D, and Solo busses inputs. This connector is mapped to receive 8 Monitor A channels, and 2 each channels for Monitor B, C, D. Signals input at this port can only be level attenuated. In standard configuration these signals are fed from the AM713 converter.

Out 1 (90 pin ELCO) Monitor A, B, C, D Speaker outputs. This connector is mapped to output 8 Control Room channels, 8 Monitor A channels, and 2 each channels for Monitor B, C, D, and Solo. The output cable fans out to 2-38 pin ELCO/Edak connectors for the Euphonix Patchbay.

Out 2 (90 pin ELCO) Control Room Speakers, Talk Back and Listen Back Preamp, and Solo Busses outputs. This connector is mapped to output 8 Control Room Main channels, 6 Control Room Alt 1 channels, 2 Control Room Alt 2 channels, 4 Listen pre, 2 talk pre and 2 Solo channels. The output cable fans out to 2-38 pin ELCO/Edak connectors for the Euphonix Patchbay.

Out 3 (DB25 female) Talk Back, Listen Back, and Solo Preamp outputs. This connector is mapped to output 4 Listen pre, 2 Talk Back pre, and 2 Solo channels, 8 Monitor A channels, and 2 each channels for Monitor B, C, D, and Solo. Output cable fans out to 8 XLR males.

Control (DB15) Input for digital control signal from Digital Pilot. Signal format is Euphonix TCC bi-directional serial protocol. All patching, switching and gain controls are communicated via this connection as well as MC524 IP address.

AC Line In (IEC) and Fuse Tray The IEC power connector accepts standard IEC power cords. 110, 220, or 240 VAC, 50 or 60Hz can be applied at this connector.

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Technical Specifications

Performance Specifications

Main inputs (Solo, CR 7 Mon A, B, C & D)

Description:	Electronically balanced, transformerless, differential input
Gain:	Variable from unity (0dB) to –72dB
Optimum input levels:	Designed to be fed from Euphonix MA703 DAC, set to 0dBFS = +27dBU
Maximum input level before clipping:	+28dBU (sine wave)
Maximum input voltages:	±16VDC, ±25VAC (common mode), ±50VAC (differential)
Input impedance:	10KΩ ± 10% each leg, 20Hz – 20KHz
CMRR:	>40dB (50dB typical), 20Hz – 20KHz

Talk Back and Listen mic inputs (T1, T2, L1 through L4)

Description:	Electronically balanced, transformerless, differential input with automatic level optimization
Gain:	AGC circuit optimizes front end gain to produce (approx.) +8dBU signal; this is then variable from +8 to –64dBU at the monitor outputs
Maximum input level before clipping:	10dBU (sine wave)
Maximum input voltages:	±50VDC, ±2.5VAC (common mode), ±5VAC (differential)
Phantom power:	48V available, link selectable on PCB
Frequency response:	Attenuated LF and HF response, -3dB at 200Hz and 10KHz

Monitor outputs

Description:	Electronically balanced & floating, differential output
Maximum output level:	+28dBU (sine wave)
Output impedance:	100Ω ± 10%, balanced or unbalanced, 20Hz – 20KHz
DC offset:	Less than ±5mV with respect to chassis GND

Full signal path (Main input to monitor output)

Frequency response:	0/-0.4dB, 20Hz – 20KHz (ref. 1kHz)
Signal breakthrough with full cut:	<-110dB, 20Hz – 20KHz
Distortion:	<0.005%, 20Hz – 20KHz, +15dBU output level
Crosstalk:	Better than -100dB at 1kHz; better than -90dB at 20KHz
Output noise:	<-90dBU rms (unweighted), giving at least 117dB of dynamic range at unity gain

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Phantom Power: 48V Jumper Settings

Phantom power is enabled by fitting the link to short pins 1 and 2; If not required (eg. A dynamic mic is being used) then it should be set to short pins 2 and 3. Pin 1 position can be ascertained by looking at the solder side, where the square pad is.

Note that the standard talk back mic on the console (wired to T1) is a condenser type which needs the phantom to be enabled. The mapping of the jumpers is as follows:

Upper board:

J1: Talkback 1 (T1)

J2: Talkback 2 (T2)

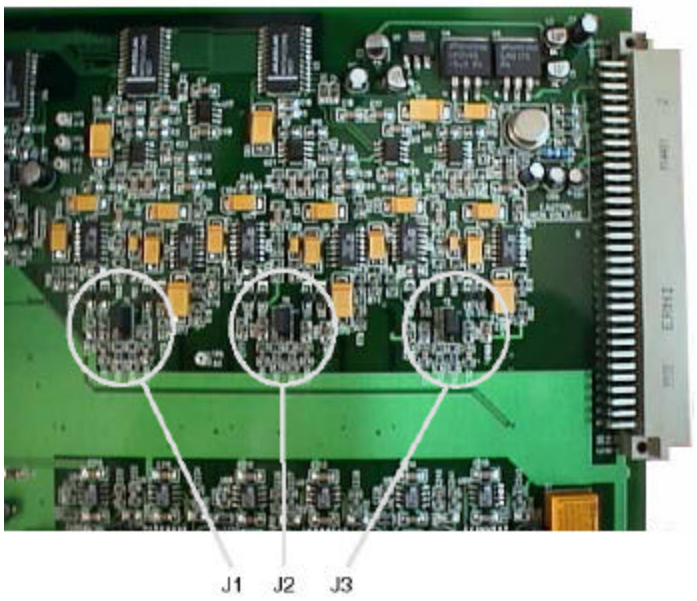
J3: Listen 1 (L1)

Lower board:

J1: Listen 2 (L2)

J2: Listen 3 (L3)

J3: Listen 4 (L4)



Environmental Requirements

5 to 35 degrees Centigrade.

Power Requirements

90- 240 VAC, 50/60Hz.

Power Consumption

70W

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User Reference

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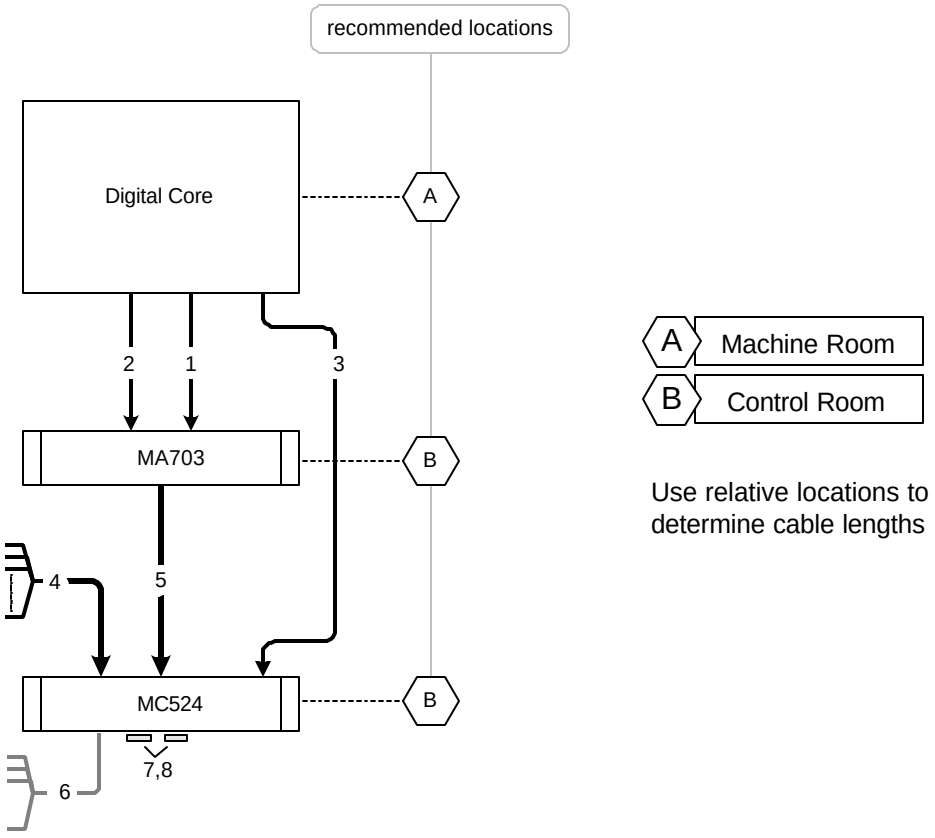
User Reference

Cable Specification – Standard Configuration



The standard lengths specified below are supplied so that the monitor interface can be located in the control room. Custom lengths are available. Cable kits must be ordered separately.

Cable	Qty	Description	10M Part #	20M Part#	Length
		Accessory cable kits by special order	**936-07084-01**	**936-07156-01**	
1	(1)	MADI Output (RG59 75 ohm coax)	032-07230-00	032-07306-00	
2	(1)	AES/EBU Sync (1xXLRM<>1xXLRF)	030-07085-01	030-07153-01	
3	(1)	TCC Control from 253I Interface Pilot	030-06983-01	030-06985-01	
4	(1)	TB/LB Mic, (1EM38<>12xXLRF)	030-06919-01		2M
5	(1)	CR/Mon/Solo Bus (1XEM90<>24xXLRF)	030-07225-01		1M
6	(1)	TB &LB Mic Pre Out (1xDB25<>8xXLRM)	032-07038-00		3M
7	(2)	Elco 90 Pin Connector w/hood	100-07470-00		NA
8	(180)	Elco Crimp Pins	100-02100-00		NA

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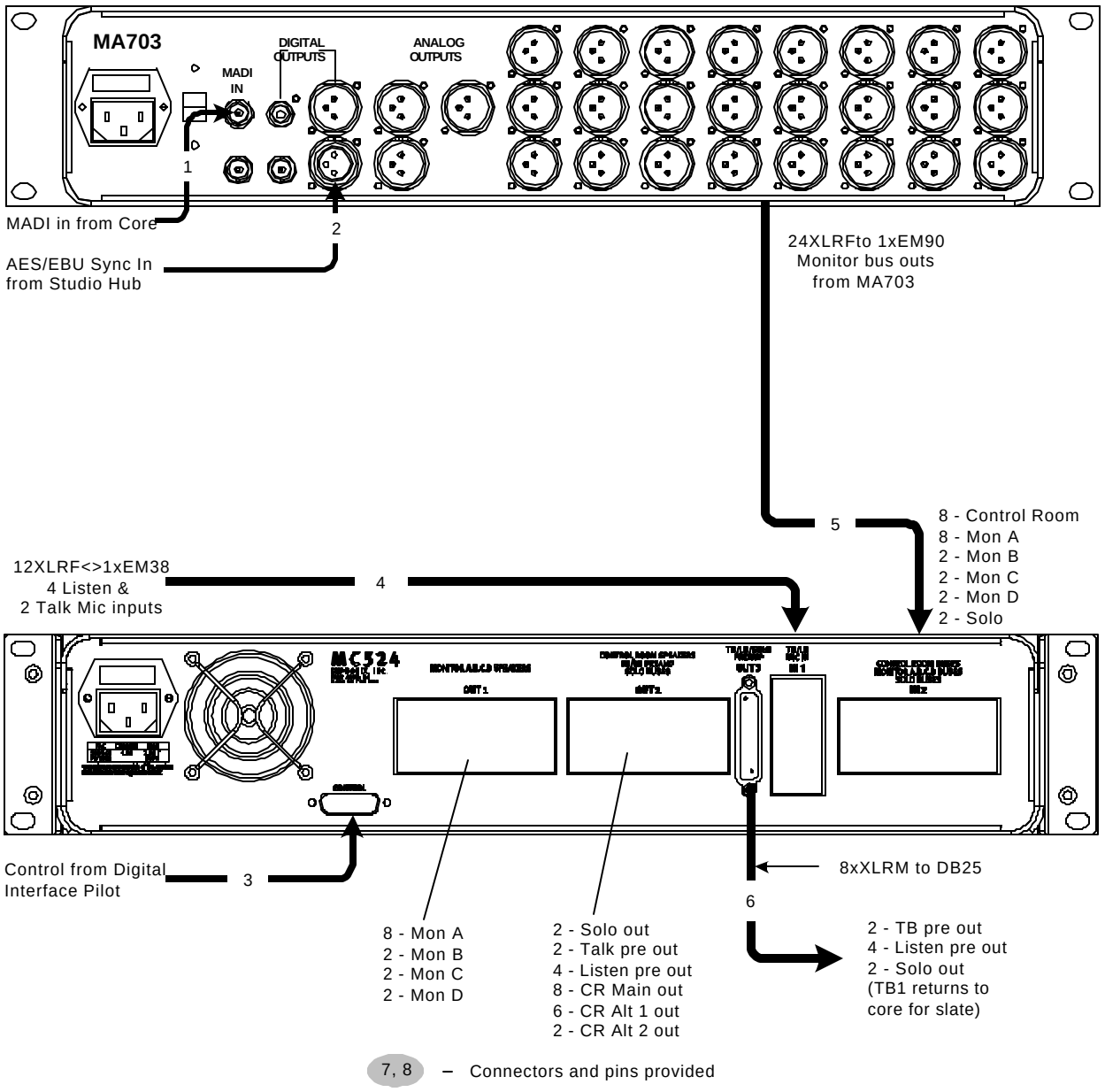
Hookup Diagram – Standard Configuration



7, 8 – Connectors and pins provided

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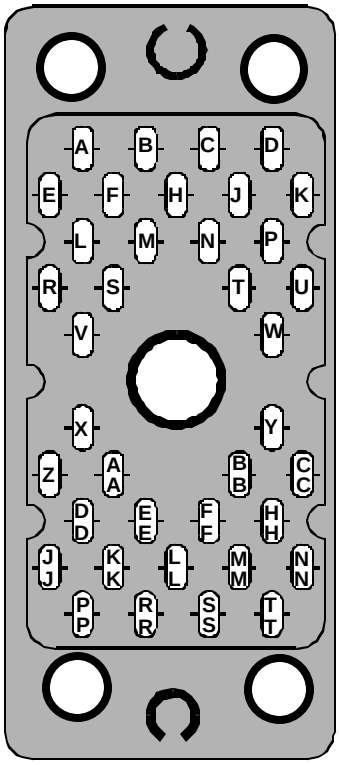
In 1 Pinout, ELCO 38

Crk #	Designator	12 X 16	24 X 32	High	Low	Gnd
1	M1	Talk 1	Talk 1	A	E	L
2	M2	Talk 2	Talk 2	B	F	M
3	M3	Listen 1	Listen 1	C	H	N
4	M4	N/A	Listen 2	D	J	P
5	M5	N/A	Listen 3	DD	JJ	PP
6	M6	N/A	Listen 4	EE	KK	RR
7				FF	LL	SS
8				HH	MM	TT
9				R	S	V
10				T	U	W
11				X	Z	AA
12				Y	BB	CC



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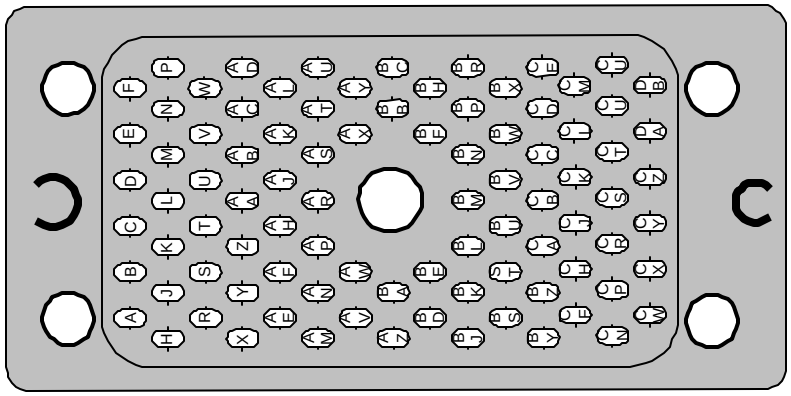
In 2 Pinout, ELCO 90

Crk #	Designator	12 X 16	24 X 32	High	Low	Gnd
1	L3	Cntrl Rm (L)	Cntrl Rm (L)	A	H	R
2	L4	Cntrl Rm (C)	Cntrl Rm (C)	B	J	S
3	L5	Cntrl Rm (R)	Cntrl Rm (R)	C	K	T
4	L6	Cntrl Rm (Sl)	Cntrl Rm (Sl)	D	L	U
5	L7	Cntrl Rm (Sr)	Cntrl Rm (Sr)	E	M	V
6	L8	Cntrl Rm (B)	Cntrl Rm (B)	F	N	W
7	L9	Cntrl Rm (Li)	Cntrl Rm (Li)	X	AE	AM
8	L10	Cntrl Rm (Ri)	Cntrl Rm (Ri)	Y	AF	AN
9	L11	Mon A (L)	Mon A (L)	Z	AH	AP
10	L12	Mon A (R)	Mon A (C)	AA	AJ	AR
11	L13	N/A	Mon A (R)	AB	AK	AS
12	L14	N/A	Mon A (Sl)	AC	AL	AT
13	L15	N/A	Mon A (Sr)	BJ	BS	BY
14	L16	N/A	Mon A (B)	BK	BT	BZ
15	L17	N/A	Mon A (Li)	BL	BU	CA
16	L18	N/A	Mon A (Ri)	BM	BV	CB
17	L19	N/A	Mon B (L)	BN	BW	CC
18	L20	N/A	Mon B (R)	BP	BX	CD
19	L21	N/A	Mon C (L)	CF	CN	CW
20	L22	N/A	Mon C (R)	CH	CP	CX
21	L23	N/A	Mon D (L)	CJ	CR	CY
22	L24	N/A	Mon D (R)	CK	CS	CZ
23	L1	Solo (L)	Solo (L)	CL	CT	DA
24	L2	Solo (R)	Solo (R)	CM	CU	BD



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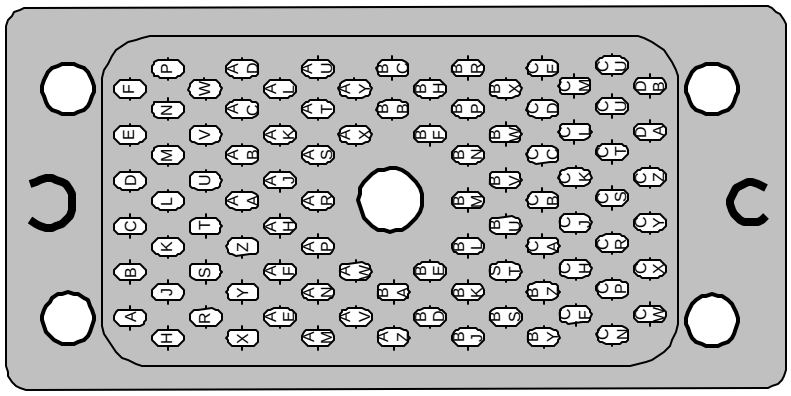
Out 1 Pinout, ELCO 90

Crk #	Designator	12 X 16	24 X 32	High	Low	Gnd
1	BO11	Mon A (L)	Mon A (L)	A	H	R
2	BO12	Mon A (R)	Mon A (C)	B	J	S
3	BO17	N/A	Mon A (R)	C	K	T
4	BO18	N/A	Mon A (Sl)	D	L	U
5	BO19	N/A	Mon A (Sr)	E	M	V
6	BO20	N/A	Mon A (B)	F	N	W
7	BO21	N/A	Mon A (Li)	X	AE	AM
8	BO22	N/A	Mon A (Ri)	Y	AF	AN
9	BO23	N/A	Mon B (L)	Z	AH	AP
10	BO24	N/A	Mon B (R)	AA	AJ	AR
11	BO25	N/A	Mon C (L)	AB	AK	AS
12	BO26	N/A	Mon C (R)	AC	AL	AT
13	BO27	N/A	Mon D (L)	BJ	BS	BY
14	BO28	N/A	Mon D (R)	BK	BT	BZ
15				BL	BU	CA
16				BM	BV	CB
17				BN	BW	CC
18				BP	BX	CD
19				CF	CN	CW
20				CH	CP	CX
21				CJ	CR	CY
22				CK	CS	CZ
23				CL	CT	DA
24				CM	CU	BD



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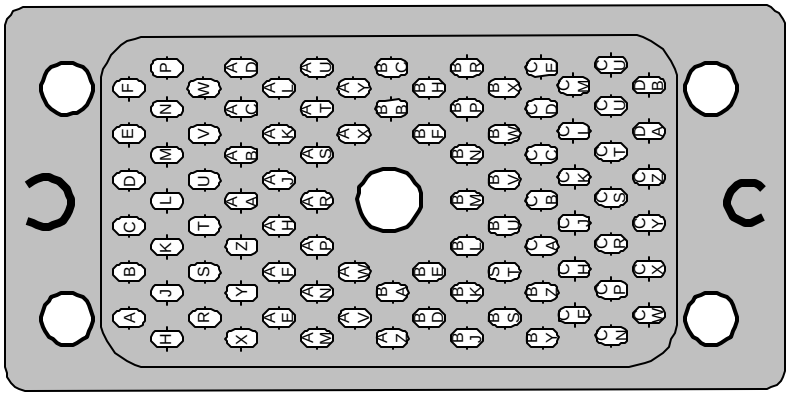
Out 2 Pinout, ELCO 90

Crk #	Designator	12 X 16	24 X 32	High	Low	Gnd
1	BO31	Solo L	Solo L	A	H	R
2	BO32	Solo R	Solo R	B	J	S
3	TL1	Talk 1	Talk 1	C	K	T
4	TL2	Talk 2	Talk 2	D	L	U
5	TL3	Listen 1	Listen 1	E	M	V
6	TL4	N/A	Listen 2	F	N	W
7	TL5	N/A	Listen 3	X	AE	AM
8	TL6	N/A	Listen 4	Y	AF	AN
9	BO3	CR main (L)	CR main (L)	Z	AH	AP
10	BO4	CR main (C)	CR main (C)	AA	AJ	AR
11	BO5	CR main (R)	CR main (R)	AB	AK	AS
12	BO6	Cntrl Rm (Sl)	Cntrl Rm (Sl)	AC	AL	AT
13	BO7	Cntrl Rm (Sr)	Cntrl Rm (Sr)	BJ	BS	BY
14	BO8	CR main (B)	CR main (B)	BK	BT	BZ
15	BO9	CR main (Li)	CR main (Li)	BL	BU	CA
16	BO10	CR main (Ri)	CR main (Ri)	BM	BV	CB
17	BO13	CR Alt 1 (L)	CR Alt 1 (L)	BN	BW	CC
18	BO14	CR Alt 1 (R)	CR Alt 1 (C)	BP	BX	CD
19	BO15	CR Alt 2 (L)	CR Alt 1 (R)	CF	CN	CW
20	BO16	CR Alt 2 (R)	CR Alt 1 (Sl)	CH	CP	CX
21	BO29	N/A	CR Alt 1 (Sr)	CJ	CR	CY
22	BO30	N/A	CR Alt 1 (B)	CK	CS	CZ
23	BO1	CR Alt 3 (L)	CR Alt 2 (L)	CL	CT	DA
24	BO2	CR Alt 3 (R)	CR Alt 2(R)	CM	CU	BD



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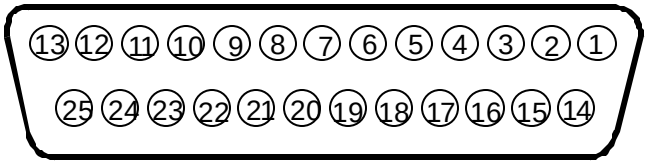
Out 3 Pinout, DB25

Crk #	Designator	12 X 16	24 X 32	High	Low	Gnd
1		T1	T1	24	12	25
2		T2	T2	10	23	11
3		L1	L1	21	9	22
4		N/A	L2	7	20	8
5		N/A	L3	18	6	19
6		N/A	L4	4	17	5
7		Solo L	Solo L	15	3	16
8		Solo R	Solo R	1	14	2

Panel DB25 Front View



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MC524 Options

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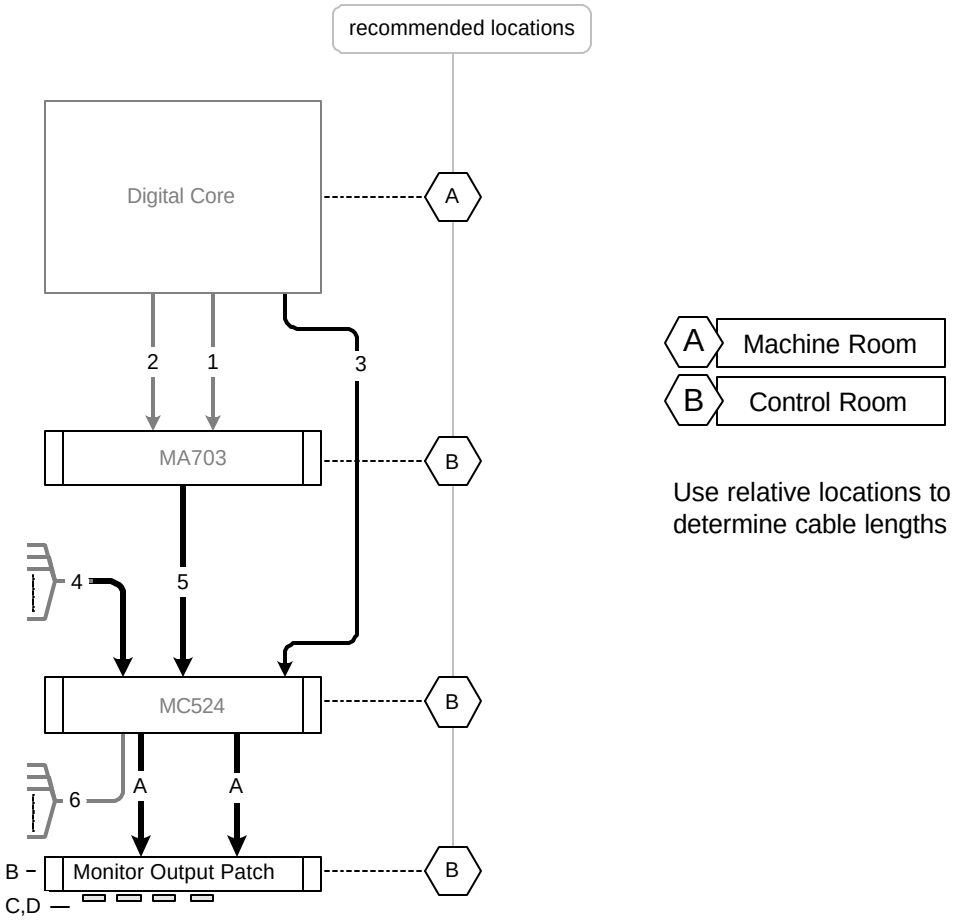
Cable Specification – Optional Monitor Output Patch



Patchbay, cables, pins and connectors are ordered separately as required.

Part	Qty	Description	Part #	Length
A	(2)	MC524 Patch Connect (1xEM90<>2xEM38)	030-07036-01	2M
B	(1)	Tie Line Patch	950-03770-01	NA
C	(4)	Elco 38 Pin Connector w/hood	100-02099-00	NA
D	(160)	Elco Crimp Pins	100-02100-00 (Supplied with standard configuration)	2M

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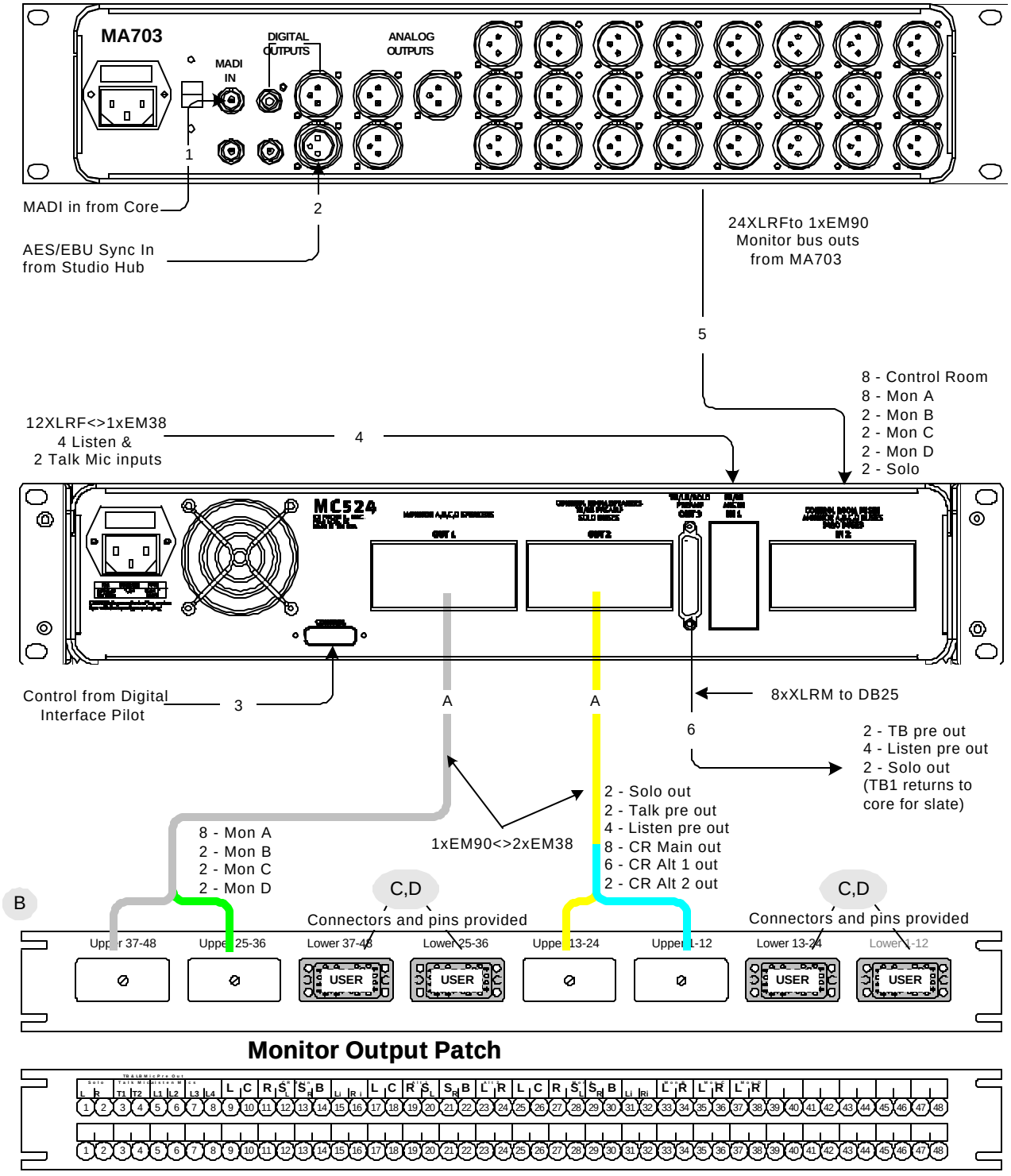
Hookup Diagram – Optional Monitor Output Patch



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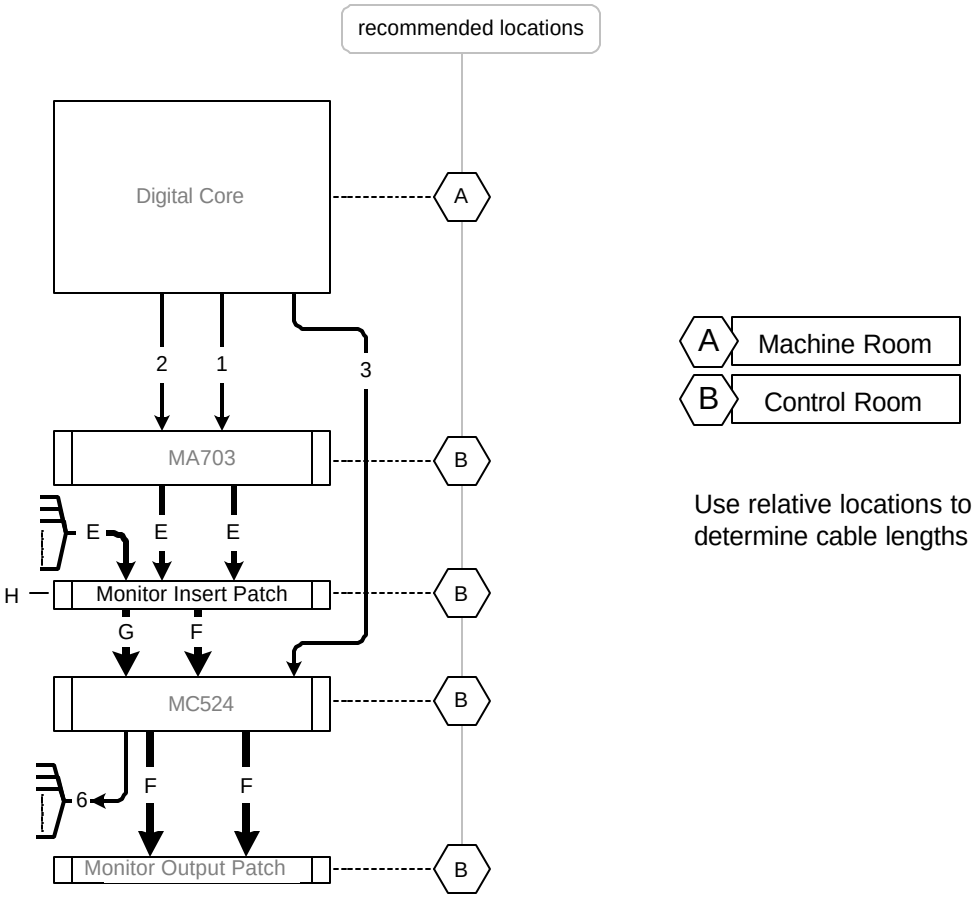
Specification – Optional Monitor Insert Patch



Patchbay, cables, pins and connectors are ordered separately as required.

Part	Qty	Description	Part #	Length
E	(3)	TB/LB Mic, Bus (1xEM38<>12xXLRF)	030-06919-01	2M
F	(3)	MC524 Patch Connect (1xEM90<>2xEM38)	030-07036-01	2M
G	(1)	MC524 Patch Connect (1xEM38<>1xEM38)	030-07158-01	2M
H	(1)	Tie Line Patch	950-03770-01	NA

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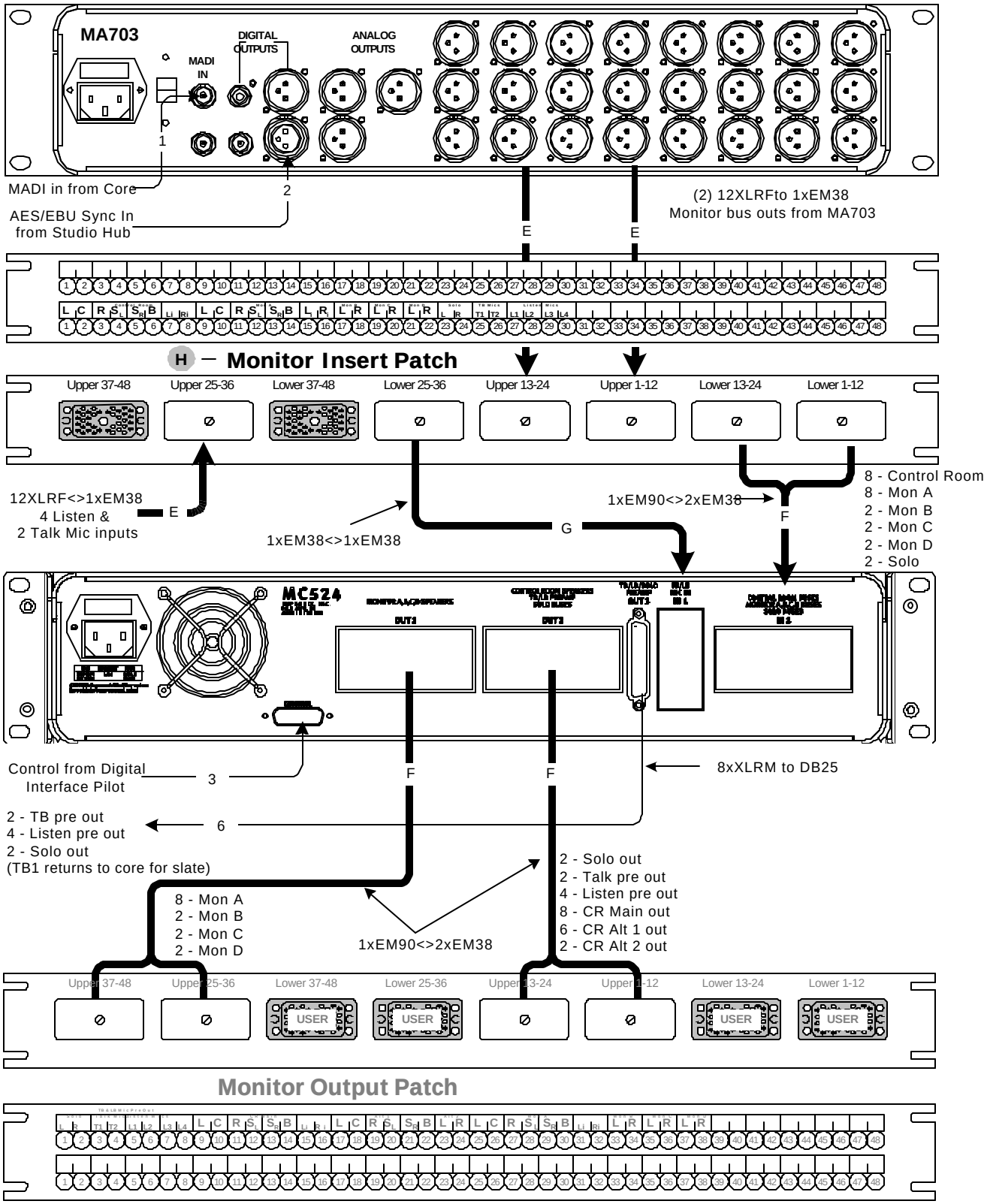
Hookup Diagram – Optional Monitor Insert Patch



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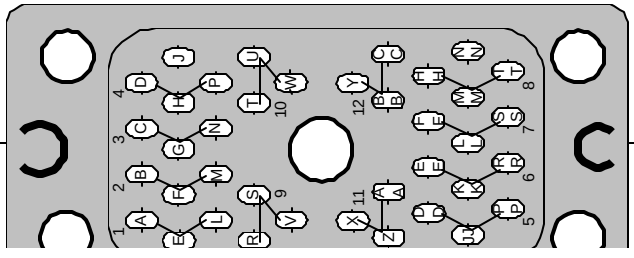
Tie Line Patch Pinout Diagrams, ELCO 38 Pin

Signal Name	Hot	Cold	Shield	Connect orPair No.
Channel 1, 13, 25, 37 Input/Output	pin A	pin E	pin L	**1**
Channel 2, 14, 26, 38 Input/Output	pin B	pin F	pin M	**2**
Channel 3, 15, 27, 39 Input/Output	pin C	pin H	pin N	**3**
Channel 4, 16, 28, 40 Input/Output	pin D	pin J	pin P	**4**
Channel 5, 17, 29, 41 Input/Output	pin DD	pin JJ	pin PP	**5**
Channel 6, 18, 30, 42 Input/Output	pin EE	pin KK	pin RR	**6**
Channel 7, 19, 31, 43 Input/Output	pin FF	pin LL	pin SS	**7**
Channel 8, 20, 32, 44 Input/Output	pin HH	pin MM	pin TT	**8**
Channel 9, 21, 33, 45 Input/Output	pin R	pin S	pin V	**9**
Channel 10, 22, 34. 46 Input/Output	pin T	pin U	pin W	**10**
Channel 11, 23, 35, 47 Input/Output	pin X	pin Z	pin AA	**11**
Channel 12, 24, 36, 48 Input/Output	pin Y	pin BB	pin CC	**12**



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Connector Specifications:

38-pin male w/ hood ELCO P/N 00-8016-038000-519 (Euph P/N 100-02099)
Use crimp pins ELCO P/N 60-8017-031300-339 (Euph P/N 100-02100)

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